

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in this application:

Listing of Claims:

Claim 1: cancelled.

Claim 2 (currently amended): The device in accordance with claim 4 3, wherein said coding/decoding circuit comprises a decision circuit for determining whether or not the coded data is the last coded data of a continuous sequence of coded data.

Claim 3 (currently amended): The device in accordance with claim 1, A communication connecting device connected at one end to a first terminal unit and connected at the other end to a second terminal unit via an IP network, and selectively operable with a plurality of communication standards adaptive to said first terminal unit, said second terminal unit and said IP network for thereby implementing real-time communication, said device comprising:

a terminal unit control circuit for storing data received from the first terminal unit or the second terminal unit, and controlling said first terminal unit in accordance with a first communication standard;

a first storage for storing size information representative of a size of data to be coded;
a coding/decoding circuit for collectively coding the data in accordance with the size

information read out of said first storage and the first communication standard and determining whether or not said data is the last data of a sequence of continuous coded data or decoding coded data received from the second terminal unit in accordance with said first communication standard;

a second storage for storing, assuming a loss of the coded data output from said coding/decoding circuit, said coded data;

an information adding/separating circuit for adding a header and data, which makes up for the loss of the coded data assumed, to said coded data in accordance with a second communication standard relating to the IP network or separating coded data from data received from the second terminal unit and feeding said coded data separated to said coding/decoding circuit;

a frequency-of-transmission monitoring circuit for determining, in response to a detection signal output from said coding/decoding circuit to show that the coded data to be newly fed is the last coded data, subject coded data transmitted an actual number of times, which is a sum of a transmission of said newly input coded data and a number of times of past transmission effected on the assumption of the loss, different from a preselected reference number of times of transmission, generating a control signal for causing said subject coded data to be repeatedly transmitted by a difference between said actual number of times and said reference number of times, and causing said subject coded data to be read out of said second storage in accordance with said control signal; and

an interfacing circuit for converting the coded data input via said frequency-of-transmission monitoring circuit to a signal based on a command or converting a signal received

from the second terminal unit to the coded data,

wherein said frequency-of-transmission monitoring circuit comprises:

 a difference calculating circuit for determining, among the newly fed coded data designated by serial numbers, the coded data with a last serial number and the data with an oldest serial number having been sent in a continuous sequence up to said data with said last serial number to be the subject coded data, and calculating a difference between the actual number of times of transmission of individual subject data and the reference number of times; and

 a control signal generating circuit for generating said control signal for causing the individual subject coded data to be repeatedly sent until said difference decreases to zero or until the actual number of times reaches the reference number of times.

Claim 4 (currently amended): The device in accordance with claim 2, A communication connecting device connected at one end to a first terminal unit and connected at the other end to a second terminal unit via an IP network, and selectively operable with a plurality of communication standards adaptive to said first terminal unit, said second terminal unit and said IP network for thereby implementing real-time communication, said device comprising:

a terminal unit control circuit for storing data received from the first terminal unit or the second terminal unit, and controlling said first terminal unit in accordance with a first communication standard;

a first storage for storing size information representative of a size of data to be coded;
 a coding/decoding circuit for collectively coding the data in accordance with the size

information read out of said first storage and the first communication standard and determining whether or not said data is the last data of a sequence of continuous coded data or decoding coded data received from the second terminal unit in accordance with said first communication standard;

a second storage for storing, assuming a loss of the coded data output from said coding/decoding circuit, said coded data;

an information adding/separating circuit for adding a header and data, which makes up for the loss of the coded data assumed, to said coded data in accordance with a second communication standard relating to the IP network or separating coded data from data received from the second terminal unit and feeding said coded data separated to said coding/decoding circuit;

a frequency-of-transmission monitoring circuit for determining, in response to a detection signal output from said coding/decoding circuit to show that the coded data to be newly fed is the last coded data, subject coded data transmitted an actual number of times, which is a sum of a transmission of said newly input coded data and a number of times of past transmission effected on the assumption of the loss, different from a preselected reference number of times of transmission, generating a control signal for causing said subject coded data to be repeatedly transmitted by a difference between said actual number of times and said reference number of times, and causing said subject coded data to be read out of said second storage in accordance with said control signal; and

an interfacing circuit for converting the coded data input via said frequency-of-transmission monitoring circuit to a signal based on a command or converting a signal received

from the second terminal unit to the coded data,

wherein said coding/decoding circuit comprises a decision circuit for determining whether
or not the coded data is the last coded data of a continuous sequence of coded data, and

wherein said frequency-of-transmission monitoring circuit comprises:

a difference calculating circuit for determining, the newly fed coded data designated by serial numbers, the coded data with a last serial number and the coded data with an oldest serial number having been sent in a continuous sequence up to said coded data with said last serial number to be the subject coded data, and calculating a difference between the actual number of times of transmission of individual subject coded data and the reference number of times; and

a control signal generating circuit for generating said control signal for causing the individual subject data to be repeatedly sent until said difference decreases to zero or until the actual number of times reaches the reference number of times.

Claim 5 (original): The device in accordance with claim 4, wherein the first communication standard and the second communication standard respectively correspond to ITU-T Recommendation T.30 (revised in 1996) and Recommendation T.38 (June/1998), and wherein said first terminal unit and said second terminal unit comprise G3 (Group 3) facsimile apparatuses corresponding to Recommendation T.30 (revised in 1996).

Claim 6: cancelled

Claim 7 (Currently Amended): The method in accordance with claim 6, A data output control method for a communication connecting device connected at one end to a first terminal unit and connected at the other end to a second terminal unit via an IP network, and selectively operable with a plurality of communication standards adaptive to said first terminal unit, said second terminal unit and said IP network for thereby implementing real-time communication, said data output control method comprising:

a first step of storing data received from the first terminal unit or the second terminal unit;
a second step of outputting size information representative of a size of data to be coded;
a third step of collectively coding the data in accordance with the read out size information and a first communication standard, and determining whether or not the coded data is a last one of a sequence of continuous coded data;
a fourth step of storing the coded data on the assumption of a loss of said coded data;
a fifth step of reading out, in accordance with a second communication standard relating to the IP network, a header for the coded data and the coded data stored on the assumption of the loss of said coded data, and combining said header and said coded data;
a sixth step of determining, in response to a detection signal showing that the coded data to be newly fed is the last coded data, subject coded data transmitted an actual number of times, which is a sum of a transmission of said newly input coded data and a number of times of past transmission effected on the assumption of the loss, different from a preselected reference number of times of transmission, generating a control signal for causing said subject coded data to be repeatedly transmitted by a difference between said actual number of times and said reference number of times, and causing said subject coded data to be read out in accordance with

said control signal; and

a seventh step of converting the coded data to a signal based on a command and outputting said signal,

wherein said sixth step comprises:

an eighth step of determining, among the newly fed coded data designated by serial numbers, the coded data with a last serial number and the coded data with an oldest serial number having been sent in a continuous sequence up to said data with said last serial number to be the subject coded data, and calculating a difference between the actual number of times of transmission of individual subject coded data and the reference number of times; and

a ninth step of generating said control signal for causing the individual subject data to be repeatedly sent until said difference decreases to zero or until the actual number of times reaches the reference number of times.

Claim 8 (original): The method in accordance with claim 7, wherein the first communication standard and the second communication standard respectively correspond to ITU-T Recommendation T.30 (revised in 1996) and Recommendation T.38 (June/1998), and wherein said first terminal unit and said second terminal unit comprise G3 facsimile apparatuses corresponding to Recommendation T.30 (revised in 1996).